

1 In the Claims

2 This listing of claims will replace all prior versions and
3 listings of claims in the application:
4

1 1. (Previously Presented) An apparatus for measuring speaker
2 cone displacement relative to a fixed position in an audio speaker
3 having a voice coil aligned with the cone along an axis, the
4 apparatus comprising:

5 (a) a variable reluctance sensor device; said sensor device
6 including a first unit fixed relative to said fixed position; and a
7 second unit mounted for movement with said speaker cone at a
8 position on said cone radially offset from said axis;

9 (b) a signal injecting circuit coupled for injecting a
10 predetermined input signal into one of said first and second units;
11 and

12 (c) a signal receiving circuit coupled with said one of said
13 first and second units for receiving a signal resulting from
14 modulation of said input signal due to variation of reluctance of
15 said sensor device caused by displacement of said first unit
16 relative to said second unit, and for generating an indicating
17 signal based upon said resulting signal; at least one signal
18 characteristic of said indicating signal being related with said
19 cone displacement.

1 2. (Currently Amended) The apparatus of Claim 1, wherein
2 said first unit comprises ~~one of an electromagnetic coil structure~~
3 ~~and a core structure;~~ and wherein said second unit comprises ~~the~~
4 ~~either of said a~~ electromagnetic coil structure ~~and said core~~
5 ~~structure.~~

1 3. (Previously Presented) The apparatus of Claim 1 wherein
2 said second unit is mounted at a substantially stationary node on
3 said cone.

1 4. (Previously Presented) The apparatus of Claim 3, wherein
2 said second unit is mounted on said cone using a wedge.

5 to 6. (Cancelled)

1 7. (Currently Amended) The apparatus of Claim ~~5~~ 1, wherein
2 said first unit comprises ~~one of~~ an electromagnetic coil structure
3 ~~and a core structure~~; and wherein said second unit comprises ~~the~~
4 ~~either of said electromagnetic coil structure and said a~~ core
5 structure.

1 8. (Currently Amended). The apparatus of Claim 7, wherein
2 said first unit comprising said electromagnetic coil structure
3 operates as at least part of a high pass filter having a corner
4 frequency; and said predetermined input signal has a frequency
5 substantially below said corner frequency.

9 to 19. (Cancelled)

1 20. (New) The apparatus of claim 1, further comprising:
2 a top plate; and
3 a supplemental top plate connected to said top plate and
4 having said first unit mounted thereon.

1 21. (New) The apparatus of Claim 2, wherein said second unit
2 comprising said electromagnetic coil structure operates as at least
3 part of a high pass filter having a corner frequency; and said

4 predetermined input signal has a frequency substantially below said
5 corner frequency.